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ANTHROPOLOGY AT THE BRITISH ASSOCIATION, 1869.

IN accordance with our usual custom, we give a notice of the papers read at the Exeter meeting of the British Association. We shall confine our remarks in this number to the reports of the public proceedings, and await the usual official report of Sir Duncan Gibb, Bart., to the Society in November next, which will contain a narrative of the transactions that took place at the Committee of Section D (Biology). The composition of the section may be estimated from the following list.

President.—George Busk.

Vice-Presidents.—Professor Balfour, C. Spence Bate, Dr. Hooker, Sir John Lubbock, Dr. W. Ransom, E. B. Tylor, A. R. Wallace, Professor E. Perceval Wright.

Secretaries.—Dr. Spencer Cobbold, Professor Michael Foster, E. Ray Lankester, Professor Lawson, H. T. Stainton, Rev. H. B. Tristram.

Committee.—Dr. Beddoe, H. G. Bohn, J. C. Bowring, H. B. Brady, W. K. Bridgman, C. Brooke, C. E. Broome, H. Buckley, Dr. Bucknill, W. Carruthers, Professor Cleland, R. O. Cunningham, W. Boyd Dawkins, Walter C. Dendy, Professor Dickson, H. E. Dresser, Dr. Martin Duncan, R. Dunn, W. S. M. D'Urban, The Mayor of Exeter, M. P. Edgeworth, D. G. Elliott, Colonel Lane Fox, Neville Goodman, J. Galton, Sir Duncan Gibb, Dr. Heaton, W. P. Hiern, H. H. Howorth, Professor Huxley, Dr. J. Hunt, Dr. Richard King, Dr. Keiburne King, Dr. L. Knij, Dr. H. Lawson, R. McAndrew, Professor McDonald, General Munro, Professor A. Newton, Rev. A. M. Norman, P. O'Callaghan, Dr. Proctor, Dr. B. W. Richardson, J. D. Sanderson, P. L. Slater, Dr. Scott, C. Stewart, Dr. Pye-Smith, Dr. J. L. Stewart, Dr. Thomson, H. B. Woodward, Dr. George Wilson.

Professor BUSK opened the proceedings of the section with some remarks intended to explain why he had not prepared an address to be delivered to the members of the section of which he was the chairman. It arose out of no disrespect to the section. It had been originally intended that his friend Dr. Rolleston should preside. Circumstances had, however, prevented him from attending, and it had fallen to his (Professor Busk's) lot to fill the office, and pressure of engagements had rendered it impossible for him to prepare an address. Following the precedent of former years, they had divided the section into different departments. The first, including all subjects of natural history, botany, zoology, and ethnology; and the second including subjects of human and comparative anatomy and physiology. The committee had decided to add Ethnology to the title of the first department. That subject had originally been joined with geography. Everyone would recollect the warm feelings exhibited in previous years on the subject of Ethnology or Anthropology, for it was a matter of indifference which word was used. But having ceased to be joined with geography, the members of the Biological Section thought that it was fitting that so important a subject as the study of man should not be omitted from the proceedings of the British Association. It was in truth one of the most important subjects that they could have before them. For those reasons it had been added to the section, and he begged to announce that the papers on Ethnology should be read on Monday and Wednesday next. Having said so much, the Professor retired to the Physiological department.

MR. SPENCE BATE continued the proceedings with a brief address. He referred to the increase in the influence of the society since its last meeting

at Plymouth thirty years ago. The Association had now become a power in the State, and was second to none in influence on the encouragement of science among the educated masses of the country. He alluded to the desire felt at Plymouth, Barnstaple, &c., as well as in Exeter, to welcome the Association in this county. He pointed out some features in the western counties of special interest to the members of the Association. Perhaps there was no part of England that afforded more varied contrast than might be seen in this county. The wild and rocky district of the north, the uncultivated waste of Dartmoor, together with the fertile valleys of the south shores offered every inducement to naturalists to extend their researches into their peculiar path of science. The narrow neck of land that separated the ancient Damnonia from the rest of England lay between Bridgewater and Lyme Regis, a line running nearly north and south. It was one moreover which corresponded with the most westerly limit of the nightingale. This was an interesting and unexplained fact. The influence of the geological character of soil in the growth of plants might well be studied here. Perhaps the botanist could have no more curious sight than that of Wistman's wood in the heart of Dartmoor, a grove of oaks that had been recorded in the Duchy Annals within a short period of the Roman conquest. Their roots were amongst the granite boulders. He then directed attention to certain museums which contained local collections interesting to the biologist—those of Dr. Leach and Charles Prideaux, of Kingsbridge, and also referred to the antiquities of Devon and Cornwall, interesting to the Ethnologist. On the wastes of Dartmoor and the uncultivated lands of Cornwall stood many an unrecorded monument of antiquity. Year by year they were gradually passing away. It appeared to him that it was the duty of the Ethnologist to earnestly take steps to record all of those that were in existence, to explore those which had not been examined, and to preserve all from destruction.

On Monday, August 23rd, the following papers were read:—

On the Primitive Condition of Man, by Sir JOHN LUBBOCK.—The author commenced by expressing a fear that some introductory observations made by the chairman would lead his audience to expect a paper of a more general character than the few remarks he should make would prove to be. It would be remembered that he read a paper at the Dundee meeting “On the Origin of Civilisation and the Primitive Condition of Man,” in answer to opinions and arguments which had been brought forward by the late Archbishop of Dublin. The Duke of Argyll had replied to him in a paper in *Good Words*, which had since been collected into a volume entitled *Speculations on the Primeval Condition of Man*, and obtained a great circulation. In that paper the Duke of Argyll had misunderstood some of his (Sir J. Lubbock's) views, and he was anxious, before that large meeting, to present a few remarks in reply. He then proceeded to say that the Duke of Argyll had also attacked Professor Huxley for proposing to place man and the quadrumana in one order of mammalia, and considers that, though this course would be justified if we considered merely the anatomical characters, it is precluded by the immense difference in intellectual power. Sir John, however, pointed out that this was a dangerous argument, since, if man was to form an order by himself on account of his mental superiority, it would be impossible any longer to maintain the unity of the human species, since they must allow a proportionate weight to the immense differences existing between different races of men. Sir John congratulated himself that the Duke, though maintaining Whately's theory as to the primitive condition of man, abandoned the arguments on which, in the opinion of that eminent logician, that theory mainly rested. He then defended himself against the Duke's criticism, that he looked on all brutal customs as primeval, and pointed out that the Duke misunderstood his argument, which was that a definite sequence of habits and ideas might be traced, and that certain customs still lingering in civilised communities told a tale of former barbarism, rather, however, on account of their simplicity than of their barbarity. The Duke's theory that savages are “mere outcasts of the human race” was then criticised as incompatible with the im-

mense area until lately occupied by tribes in a state of barbarism, and it was shown that the Brazilians, occupying a rich and fertile country, were lower than the Esquimaux tribes on the shores of the icy sea. In old times, as now settlers of new countries were, in Sir John's opinion, not "mere outcasts," but men of energy and enterprise. The Duke had asserted that "all Sir John's facts, when properly understood, told against him," which he endeavoured to prove by giving three instances, taken, however, by a curious oversight, not from Sir John's *Memoir on the Primitive Condition of Man*, but from a different work. The author, however, shewed that these cases did not really tell against his view. For instance, the Duke maintained that the Tasmanians, who had no boats when discovered, must originally have possessed some, "because they could not have walked over the sea;" but the same argument would apply to the kangaroo, the echidna, and other animals which inhabit both Australia and Tasmania, and whose presence proves a former land connection between these two countries. The Duke, proceeded the author, though admitting the antiquity of man, does not, I think, appreciate the geological changes which have occurred during the human period. The only other case which he quotes is that of the highland Eskimo, who had no weapons, nor any idea of war. The Duke's comment is as follows:—"No wonder, poor people! They had been driven into regions where no stronger race could desire to follow them. But that the fathers had once known what war and violence meant there is no more conclusive proof than the dwelling-place of their children." It is perhaps natural that the head of a great highland clan should regard with pity a people who, having "once known what war and violence meant," have no longer any neighbours to pillage or to fight, but a Lowlander can hardly be expected seriously to regard such a change as one calculated to excite pity, or as any evidence of degradation. In my first paper I adduced as an argument the condition of religion among the different races of man, a part of the subject which has since been admirably dealt with by Mr. Tylor, in a lecture at the Royal Institution. The use of flint for sacrificial purposes long after the introduction of metal seems to me a good case of what Mr. Tylor has aptly called "survival." So also is the method of obtaining fire. The Brahmin will not use ordinary fire for sacred purposes,—he does not even obtain a fresh spark from flint and steel, but reverts to, or rather continues, the old way of obtaining it by friction with a wooden drill, one Brahmin pulling the thong backwards and forwards while another watches to catch the sacred spark. I also referred to the non-existence of religion among certain savage races, and, as the Duke correctly observes, I argued that this was probably their primitive condition, because it is difficult to believe that a people which had once possessed a religion would ever entirely lose it. It is hardly necessary to explain to any one that I did not intend to question the possibility of a change in, but a total loss of religion. This argument filled the Duke with "much astonishment." "Surely," he says, "if there is one fact more certain than another in respect to the nature of man, it is that he is capable of losing religious knowledge, of ceasing to believe in religious truth, and of falling away from religious duty. If by 'religion' is meant the existence merely of some impressions of powers invisible and supernatural—even this, we know, can not only be lost, but be scornfully disavowed by men who are highly civilised." Yet, in the very same page, with that curious tendency to self-contradiction of which I have already given several instances, the Duke goes on to say, "the most cruel and savage customs in the world are the direct effect of its 'religions.' And if men could drop religions when they would, or if they could even form the wish to get rid of those which sit like a nightmare on their life, there would be many more nations without a 'religion' than there are found to be. But religions can neither be put on nor cast off like garments, according to their utility, or according to their beauty, or according to their power of comforting." With this I entirely agree. Man can no more voluntarily abandon or change the articles of his religious creed than he can make one hair black or white, or add one cubit to his stature. I do not deny that there may be excep-

tional cases of intellectual men entirely devoid of religion, but if the Duke means to say that men who are highly civilised, habitually, or frequently, lose and scornfully disavow religion, I can only say that I should adopt such an opinion with difficulty and regret. There is, so far as I know, no evidence on record which would justify such an opinion, and, as far as my private experience goes, I, at least, have met with no such tendency. It is, indeed, true that from the times of Socrates down to those of Luther, and perhaps later, men in advance of their age have discovered particular religions and particular myths; but the Duke of Argyll would, I am sure, not refuse a desire for reformation with the scornful disavowal of religion as a whole. Some philosophers may object to prayers for rain, but they are foremost in denouncing the folly of witchcraft; they may regard matter as aboriginal, but they would never suppose, with the Redskin, that land was created, while water existed from the beginning, nor would any one now suppose, with the South Sea Islanders, that the Peerage were immortal, but not commoners. If, indeed, there is "one fact more uncertain than another, in respect to the nature of man," I should have considered it to be the gradual diffusion of religious light and of nobler conceptions as to the nature of God. The lowest savages have no idea of a Deity at all. Those slightly more advanced regard him as an enemy to be dreaded, but who may be resisted with a fair prospect of success, who may be cheated by the cunning, and defied by the strong. Thus the natives of the Nicobar Islands endeavour to terrify the Deity by scarecrows, and the negro beats his fetish if his prayers are not granted. As tribes advance in civilisation their deities advance in dignity, but their power is still limited; one governs the sea, another the land; one reigns over the plains, another among the mountains. The most powerful are vindictive, cruel, and unjust; they require humiliating ceremonies and bloody sacrifices. But few races have arrived at the conception of an omnipotent and beneficent Deity. It certainly appears to me that the gradual development of religious ideas among the lower races of men is a fair argument in opposition to the view that savages are degenerate descendants of civilised ancestors. Archbishop Whately would admit the connection between these different phases of religious belief, but I think he would find it very difficult to show any process of natural degradation and decay which could explain the quaint errors and opinions of the lower races of men, or to account for the lingering belief in witchcraft and other absurdities, &c., in civilised races, excepting by some such train of reasoning as that which I have endeavoured to sketch. In conclusion Sir John pointed out the remarkable similarity between savages and children, remarking that in our own homes we might trace up the gradual progress of civilisation, for that the history of the individual was an epitome of that of the race. But it was unnecessary to multiply illustrations. Every one who had read much on the subject will admit the truth of the statement. It explained the capricious treatment which single white men had received from savage potentates; how they had been alternately petted and ill-treated, at one time loaded with the best of everything, at another neglected or put to death. The close resemblance existing in ideas, language, habits, and character, between savages and children, though generally admitted, had usually been disposed of in a passing sentence, and regarded rather as a curious accident than as an important truth. Yet from several points of view it possessed a high interest. Children and savages love toys and pets. Sir John particularly instanced the rattle which was used by some savages as an emblem of authority. Tossing halfpence as dice, again, which used to be a sacred and solemn mode of consulting the oracles, is now a mere game for children. So again, the doll is a hybrid between the baby and the fetish, and, exhibiting the contradictory character of its parents, becomes singularly unintelligible to grown up people. Mr. Tylor had pointed out other illustrations of this argument, and I would refer those who feel interested in this part of the subject to his excellent work. Better understood it might have saved us many national misfortunes, from the loss of Captain Cook down to the Abyssinian war. It has also a direct bearing on the subject of the present

discussion. The opinion is rapidly gaining ground among naturalists, that the development of the individual is an epitome of that of the species; a conclusion which, if fully borne out, will evidently prove most instructive. Already many facts are on record which render it, to say the least, highly probable. Birds of the same genus, or of closely allied genera, which, when mature differ much in colour, are often very similar when young. The young of the lion and the puma are often striped, and foetal whales have teeth. Leidy has shown that the milk teeth of the genus *Equus* resemble the permanent teeth of *Anchitherium*, while the milk teeth of *Anchitherium* again approximate to the dental system of *Meryclippus*. Rüttimeyer, while calling attention to this interesting observation, adds that the milk teeth of *Equus caballus* in the same way, and still more those of *Equus fossilis* resemble the permanent teeth of *Hipparion*. Agassiz, according to Darwin, regards it as a "law of nature" that the young state of each species and group resembles older forms of the same group, and Darwin himself says that "in two or more groups of animals, however much they may at first differ from each other in structure and habits, if they pass through closely similar embryonic stages, we may feel almost assured that they have descended from the same parent form, and are therefore closely related." So also Mr. Herbert Spencer says—"Each organism exhibits within a short space of time, a series of changes which, when supposed to occupy a period indefinitely great, and to go on in various ways instead of one way, gives us a tolerably clear conception of organic evolution in general." It may be said that this argument involves the acceptance of the Darwinian hypothesis; this would, however, be a mistake; the objection might indeed be tenable if men belonged to different species; but it cannot fairly be urged by those who regard all mankind as descended from common ancestors; and, in fact, it is strongly held by Agassiz, one of Mr. Darwin's most uncompromising opponents. Regarded from this point of view the similarity existing between savages and children assumes a singular importance, and becomes almost conclusive as regards the question now at issue. Lord Dunraven, as the president of the Cambrian Archæological Association, said last week, in his opening address:—"If we look back through the entire period of the past history of man, as exhibited in the result of archæological investigation, we can scarcely fail to perceive that the whole exhibits one grand scheme of progression, which, notwithstanding partial periods of decline, has for its end the ever-increasing civilisation of man, and the gradual development of his higher faculties." I confess, therefore, that after giving the arguments of the Duke of Argyll my most attentive and candid consideration, I see no reason to adopt his melancholy conclusion, but I remain persuaded that the past history of man has on the whole been one of progress, and in looking forward to the future we are justified in doing so with confidence and with hope.

In the subsequent debate—

Sir GEORGE GREY said he had listened with extraordinary interest to the paper which had been read by Sir John Lubbock. It was marked by profound research and learning, great attention to the subject, remarkable candour, and generous and fine temper. But he found difficulty in speaking on the subject. He hardly knew what "civilisation" meant, and he hardly knew what "barbarism" meant. Living recently in London near the Royal Palace, in the heart of the most civilised nation, at the back of the house in which he resided, he had witnessed scenes of barbarism and heard language the like of which he had not seen or heard in any savage race upon the earth. With him civilisation was inseparable from religion. It really meant that if it meant nothing else. It was possible for a nation to be polished in the highest degree in arts, to be learned on scientific subjects, and yet to enfold in itself a population sunk in the deepest barbarism and ignorance. The Greeks and Romans, and Great Britain of the present day, afforded proof of what he said. He had always felt that the Archbishop of Dublin was mainly right. Regarding civilisation as the development of religious feeling, and the knowledge of man's duty to his fellow-man, he believed that no savage

nation had ever attained to that knowledge of itself. The highest state of civilisation was the highest development of Christianity—the unselfishness of man and regard for the welfare of his fellow-man—and he believed that this virtue had in every case been introduced among the various races of mankind by some race who claimed (he would not say whether rightly or wrongly) by inspiration to have received a knowledge of its truths. In every case where people did recognise duties of that kind, they affirmed that they had received the knowledge in this way. He had been much among savages, but had never seen any tendency in them to advance in the civilisation of which he had spoken, or in the arts that were beneficial to mankind generally. The laws and institutions of the savages which he had studied contained in themselves a tendency to perpetuate barbarous manners and customs, and he always believed that the greatest evil that could befall man would be for him to sink from the knowledge of that virtue and those religious truths to which he had referred. The result would be, as it had been, to fall into idolatry, which entailed innumerable cruelties and evils on mankind. He made no distinction between the cruelty of gladiatorial slaughter by the Romans and the human sacrifice and bloodshed of the Polynesian islanders. Those races that had had imparted to them the higher duties and knowledge of which he had spoken were really the only races to be regarded as civilised, and that civilisation was derived from a source beyond themselves.

Mr. Howorth wished to throw an apple of discord, or rather a Siberian crab, into the discussion. The views that had been delivered by Sir J. Lubbock could best be examined by the light of the knowledge they possessed of Asiatic populations. The lesson that was taught them in Central Asia was opposed to the views of Sir J. Lubbock. The great Manchoorian race which had conquered China, was now represented in Siberia by Tartars in a miserable condition. He also contrasted the original condition of the ancient Mongolians and Turks with that of the representatives of those races, as described, among others, by Professor Vámbéry. The result of this contrast was to show that the respective races had suffered degradation from a higher state of civilisation. He refused to consider the question of Africa and America, because they had really no history of the aborigines of those countries, as they had of those of Asia, to whom he had referred. He was highly pleased with the speech of Sir George Grey. There was no reliable account of any savage race having improved itself. Egypt and China might be referred to, but they knew nothing of the aborigines of those countries. But they had instances of nations having received a legacy of civilisation from others. Sir J. Lubbock had referred to the survival of savage customs among civilised people. Upon this he observed that there was a tradition among the New Zealanders that they had come from a race with whom cannibalism was not a custom. On the other hand, the existence among the Shamans of Asia of the rattle and the drum as instruments of importance, however childish it may seem, was to be traced back to the Buddhists of Thibet, and it would not be pretended that the philosophy of the Buddhists was to be ranked with the notions of the savages whose use of the rattle, &c., had been made so much of in support of Sir J. Lubbock's views. Mr. Howorth believed with Sir J. Lubbock that a certain kind of progress was going on, for when we compared Socrates with Stuart Mill, Diogenes the dog with the present Chancellor of the Exchequer for cynicism, and Zoroaster, Confucius and Moses with Hepworth Dixon as an historian, he thought that we had not fallen very far behind.

Dr. Blanc (of the Abyssinian expedition) observed that Sir J. Lubbock, by his reference to Abyssinia, had probably meant that king Theodore was a child. With that Dr. Blanc agreed, only that he was a very naughty child, and he might be made the subject of a moral to show the evil of pursuing a wilful career. Theodore came to his grave through acting like a grown-up child. When he ought to have been fighting against the rebels, he wasted two months in futile attempts to build a raft with wheels to be propelled by hands. Once his warriors propelled it 200 yards across a lake, but it leaked, and Theodore gave up the job. Another time, hearing of

English artillery being strong, he ordered his European workmen to cast a mortar. They cast one weighing 16,000lbs., and lost four months in bringing it to Magdala, when it was never used. In the third place, when the English army was approaching, the advanced guard carrying ordnance covered with cloth on the backs of camels, he judged they were treasure-boxes and incited his chiefs to go to the attack in the expectation of much loot. He thought the acts of Theodore confirmed Sir J. Lubbock's opinion that the savage was like a child.

Sir WALTER JAMES was anxious to call attention to the interesting analogy which Sir J. Lubbock had noticed—though it was not altogether novel, for it was to be met with in Dr. Temple's article in *Essays and Reviews*—the analogy that existed between the history of the individual and of the race. He agreed with that view, but he was not prepared to concur in the inference that the human race was indefinitely progressive. If the analogy were a true one they ought to bear in mind the characteristic faults of old age. The faults of savage life, it was assumed, were those of childhood. Were not the faults of ultra-civilisation the faults of old age? One of the characteristic faults of old age was an over-estimate of the value of money. So, as civilisation went on, the estimate of wealth increased, and the nobler and more chivalrous qualities of our ancestors might have a tendency to diminish. He did not deny that generous and self-denying men existed among them; but they should take warning against the characteristic defects of old age that might be threatening civilisation. One test of civilisation was the value put on human life. Savages put very little value on it. But was it not a melancholy thing that there were millions of men in arms in Europe, if not to the direct, to the indirect damage of human life in many ways? Turn again to the want of protection from child labour, as in our own factories. Therefore while subscribing to the analogy drawn by Sir J. Lubbock, yet they could not look forward to everything being *couleur de rose*. If the child was like the savage, the old man became in many respects, unfortunately, like the child. We were advancing in scientific knowledge and research, but an advance in morals was not so clear a fact. He feared the human heart was what mathematicians called a "fixed quantity," and not susceptible of improvement like other parts of his nature.

The Rev. H. B. TRISTRAM observed that the line of progress had not been continuous. What had become of the old civilisation of the Assyrians? With respect to savages, it must be said to their credit that they were commonly equal in conduct to the code under which they lived. The Arab had an extreme veneration for truth, which his code enjoined, although he would kill a man without compunction.

Mr. A. R. WALLACE contributed a lengthy speech to the discussion. He regretted that the Duke of Argyll was not present to reply for himself to Sir John Lubbock's admirable paper. In his Grace's absence he said he would take some points in his favour that might be made. No doubt, as a general principle, the evidence pointed to a decided and tolerably steady advance of mankind in all those arts of life, the grand sum of which determined civilisation. At the same time, there were a great many matters in which there seemed to be some objection to this view. There were one or two cases that seemed to show a degradation or loss of civilisation. The ancient remains found in America showed the existence of a race at a time not very long past which were decidedly superior to any native aborigines now in North America, inasmuch as they worked copper mines, which none of the present races did. There were also elaborate temples and works of art to attest a wide-spread civilisation once existing on that continent, and now lost. Then, again, there was a sort of special pleading in the argument of Sir John Lubbock's, that if the native Australians were the degraded descendants of a race half-civilised, the European settlers ought also to become degraded. But the European settlers were not cut off from their race, which altered the case considerably, and rendered the argument fallacious. Suppose that a European colony were entirely isolated from their race, then, he thought, there was almost a moral certainty that in the course of centuries they would suffer a considerable amount of degradation, and

hardly be recognised as the descendants of a civilised people. Therefore, he believed that the lowest races of mankind owed their low condition not to their retaining the type of the original state of man, but because they had suffered degradation from a more civilised race. In a discussion on civilisation it was almost impossible to keep morals out of the question altogether. The people who were advanced in intellect and arts, but low in morality, could hardly be considered civilised. Therefore, although he believed the two things were, to a great extent, distinct, he was inclined in this question to place more weight on morals than on intellect, while Sir J. Lubbock would put more weight on intellect than on morals. It was indisputable, in regard to arts, that man was improving, but he would hardly say so much with regard to morals. We could trace backward to pre-historic races the diminution of the arts of life till we arrived at a period when the arts enabled man to do no more than fashion flints into weapons and tools. But as to morals, we did not find such decided diminution as we looked backward. He had met with savage tribes destitute of the arts of life and low in intellect, but possessed of a wonderfully delicate sense of right and wrong in morals. How did they get that sense? He had met some savages who would refuse to do an action which they thought would infringe on the rights of others, and had refused to answer questions lest they should tell a lie. He was speaking of the Dyaks of Borneo. How was that moral feeling to be accounted for? If they represented the original state of man, how came the moral sense to have grown, and the other faculties not to have grown? There was some evidence of a moral or religious sentiment existing even in pre-historic man; he alluded to the discovery in the Cave of Aurignac of preparations made for the food of the dead of the pre-historic race laid in the cavern. This showed the appreciation of a future state—a feeling which showed man to be above the brute. He agreed in the similarity drawn between children and savages. But was not the moral sense of children and their affection higher than their intellect? But morals were hardly a scientific question; but he still thought that on its determination depended the true state of early man. They ought not to conclude that because man had advanced in the arts of life therefore he had advanced in morals. He did not say it was proved that man had not advanced in morals; but all the arguments that went to prove that ancient man was not civilised intellectually utterly failed to prove that he was not civilised morally. The evidence as yet only went to prove that the moral nature of man was only modified, not improved, under civilisation. Therefore, the argument of derivation from the lower form of life did not in the slightest degree touch the unknown region of his moral nature.

Mr. EVANS thought much of the discussion had arisen through different views being taken by the Duke of Argyll and Sir J. Lubbock of the word "civilisation." It could be shown in regard to the lowest state of man that the struggle for life must occupy so much time as to leave little or none for moral culture. He did not attach much importance to the evidence of the cave of Aurignac, but he thought there was great evidence of improvement in man. Our own civilisation was derived from the Romans, the Greeks, and, further back, from the Egyptians; and when we had gone back to the Egyptians, it was found we had arrived at a period when many of our civilized appliances were unknown. Languages of civilised people bore evidence of having been derived from languages of monosyllables which marked the uncivilised. When man appeared on earth he was deficient of domestic animals and of corn, and must have been in a state not much above that of the animals that surrounded them. It was improbable that he was in morals very far above the animals with which he was somewhat connected in those early times.

Mr. BOYD DAWKINS said a few words relative to the Cave of Aurignac. As regarded the supposed religious history of the people who used that cave, and who were contemporaneous with the mammoth, he had indisputable evidence that the cave contained nothing that bore on the religious condition of this ancient folk. On the contrary, he had bones in his possession taken from the cave, showing that it must have been opened after it was

occupied by pre-historic man. The bones were those of animals unknown to Western Europe until ages after the ancient folk and the mammoth were lost. He could not concur with Mr. Wallace that arts and morals were ever divorced.

The Rev. J. INGLE said that he thought that Sir J. Lubbock had misread some portion of the Duke of Argyll's book, and suggested that it would be advisable to have a definition of "civilisation" as a means of simplifying the subject before them. He should like to hear Sir John Lubbock on the question of languages and on that of traditions. How was it that the tradition of savage people so generally spoke of their progenitors having been civilised? Again, as to the ancient civilisations, and as to the arts, ancient Rome was better supplied with water by means of its aqueducts than London was in the present day. If there was a universal law of progress he would ask Sir J. Lubbock to quote one specimen of a savage nation having advanced of itself to a state of civilisation. Without this specimen he thought the theory of Sir J. Lubbock might be rather termed a nebulous hypothesis.

The PRESIDENT said the discussion had been most pertinent. Mr. Wallace had told them that they should divide those two lines of enquiry—arts and morals; but he did not concur with Mr. Wallace that the question of moral history was not a scientific one. He thought it was; but the moral progress had not been studied as that of material conditions had. Sir J. Lubbock's paper was directed to the question of the material progress of mankind, and he was bound to say that in his opinion the paper had not been answered. Mr. Howorth had not met the exigencies of the case. He could assure Mr. Ingle that he was wrong in thinking that the traditions of savage races generally pointed to their having descended from civilised men; it was more commonly the reverse. He agreed with Sir John Lubbock, and disagreed with the Duke of Argyll. He would ask confidently whether there was really much difference between the good but ignorant savage of whose existence travellers had told them, and the ignorant primeval man to whom the Duke of Argyll looked back as the early representative of our race.

SIR JOHN LUBBOCK briefly replied to the several speakers.

Human Remains in the Cave of Cro-Magnon, in the Valley of the Vézère.—Dr. P. M. DUNCAN read a paper upon some cave remains found in the valley of the Vézère in the course of certain railway operations. The remains have been scientifically examined by order of the French Government, and there were four distinct layers of charcoal, or hearths, with considerable intervals between them. Bones of the mammoth were found here, mixed with human bones, and also the bones of the reindeer. M. Lartet, who examined the bones for the French Government, held that the men and the mammoth had existed together; but Dr. Duncan, and those who took part in the discussion, did not favour the view, and it was generally agreed that the bones of the mammoth might have been found by reindeer hunters, and carried to the cave.

Flint Implements in the Valley of the Thames.—Colonel LANE FOX described some researches he had made recently near Acton, Middlesex, and at various places along the valley of the Thames. He had found a large number of flint implements in such a position as to leave no doubt that the river Thames had once occupied banks one hundred feet higher than the present, and for many miles in width.

Mr. EVANS said that the gravels in which the implements were found must have been deposited in the river terraces at a period wonderfully remote, yet the men who had made and used the flint implements must have lived prior to that time.

Discovery of a Lake Island in South Wales, by the Rev — DUMBLETON.—The paper was abundantly illustrated by drawings, and also by some piles and other articles found on the island. The description of the island showed it to be identical with the lake dwellings of Switzerland; and it appeared that there had been a tradition in the neighbourhood of a city buried in the lake. The bones found round the island were pronounced to be those of the horse, of a small species of ox, sheep, and wild boar.

Mr. LEE said he was not of opinion that a very remarkable antiquity could be claimed for the island.

So called "Petrified Human Eyes" from Peru.—Dr. SPENCER COBBOLD, for the Rev. Dr. A. HUME, read a paper on the discovery of what had been supposed to be petrified human eyes at Arica, in Peru. The region is exceedingly arid, and animal remains are not decayed, but dried, when put into the earth; and the communication stated that the corpses of Indians who had been buried before the Spaniards had landed were frequently to be found. In one part of Arica, near to where large numbers of people were known to be buried, a quantity of eyes had been obtained. Some of these had been found near the corpses, and some, it is said, in the eye-holes of the skulls. A belief had prevailed that they were human eyes petrified; but, on a collection of them being sent to Professor Owen (see on this subject *Trans. Ethno. Soc.*, new series, vol. iv, p. 59, read January 10th, 1865), he pronounced them to be the eyes of cuttle-fishes. Several were exhibited by Dr. Cobbold, and examined with much interest by those in the room.

The following proceedings took place on August 24th:—

On Stone Implements from Rangoon, by ADMIRAL SIR EDWARD BELCHER.—This paper was written by a gentleman who is now in India, and communicated to the British Association by Admiral Sir E. Belcher, with a recommendation to furnish the former with the means of pursuing his investigations. Description was given of the several implements discovered, and elicited some remarks from the President.

On the paucity of Aboriginal Monuments in Canada, by SIR DUNCAN GIBB, Bart.—Being familiar with the archaeological discoveries in Canada from long residence there, it seemed to the writer that there must be some reason why monuments of an aboriginal character were wholly absent or exceedingly scarce. Humboldt referred to one found in the Western Prairies, but now lost. The author in his inquiry excluded small Indian remains, such as flint implements, pottery, burying grounds, &c., also mounds or barrows. It referred to monuments of stone, built either as dwellings or temples, as met with in Central America. There were two reasons, he said, why such remains were not found in Canada and other northern nations. The first was the extreme cold and rigour of such a climate as existed in Canada, with its six months of winter. The ground covered with snow was unfavourable for the preservation of architectural monuments or remains of any kind, unless carefully looked after as in modern times. The action of the frost he described. For the same reason similar remains were scarce in Northern Europe and Asia. Climate was not only the great drawback to their preservation, but if any monuments had existed some centuries of frost would have completely destroyed them. Secondly, the people who built the American and Canadian mounds, he believed, were the descendants of the Tartars who crossed into America by Behring's Straits, and occupied the whole or greater part of the continent. He considered them a different race to those who built the magnificent temples of Central and South America. They were not builders of stone, unless as met with in some of the mounds. But supposing either race to be builders of stone, had any such monuments existed in the colder parts of North America they would not have held together for any period of time. Although the climate varies somewhat in Canada, being milder in the western part, still no evidences of true Aboriginal monuments were to be found. The climate of Egypt and Central America was peculiarly favourable for their preservation, and who could say the builders were not the descendants of the same people? Of rock sculptures and markings Canada could boast few, especially in caverns, but there was no reason why some day they might not be discovered, particularly in the series of caverns existing between Flamborough and Georgian Bay, and also in a series of caverns which the author conjectured would be some day discovered in rocks of a similar formation in the Island of Anticosti.

On the Primaval Status of man, by Mr. W. C. DENDY.—“Men of faith should inquire more, and men of science should believe in more.” Starting from these premises, the writer of the paper enunciated the principle that matter,

ere it could act, must be specially endowed with the force and faculty of action. Chemistry had not yet evolved a living cell. Mr. Dendy criticised, and, in criticising, satirised the Darwinian theory; and contended that fossil palæontology indicated not exaltation but degradation. Was it not wonderful, on the hypothesis of the simial origin of man, that the chimpanzee, with a brain so nearly resembling that of man, and with organs fitted for speech, had never learnt to utter one word? Certainly the difference in the brain of man and the ape was more in quality than quantity; and there was a near resemblance between the most anthropoid ape and the most pithecoïd man. But there was no chance of modern transmutation; and palæontological researches had failed to supply the missing link. If the link were found, would it prove either exaltation or degradation—the ape-man or the man-ape? Man, at least, historically had confirmed the purity of his blood, and the inborn dignity of his intellect and prowess.

Dr. COBBOLD referred to palæontology to prove that there had been a definite succession and progress in the appearance of animal life on the globe from the lower to the higher forms.

Dr. DUNCAN, in reply to an assertion of Mr. Drake, denied that anthropologists were irreligious. If they attempted to evolve man from any animal they must go far back, as Professor Huxley did, into geologic time. It was ridiculous to try to connect man with the apes.

Sir DUNCAN GIBB and the Rev. Mr. NORMAN also defended the anthropologists and ethnologists against the charge of irreligion.

Mr. E. VIVIAN suggested that there was evidence of two origins of the human race—that they had evidence of a primeval barbarous race existing in far back times; and of the introduction of a later race, highly civilised and moral, at a period not further back than that indicated by Ussher's Chronology. Hence there was truth and error in the opposite theories on the subject of the origin and progress of man.

Mr. LEWIS, Mr. WALLACE, and others, continued the discussion.

Megalithic Monuments, by Mr. A. L. LEWIS.—He said there exists a practically unbroken chain of megalithic (druidic) monuments extending from India to Great Britain. Who were their builders? Circumstances—namely, such an identity of plan as could not be accidental, extending through an unbroken chain of communication, and the existence of common practices and superstitions, and other traces of affinity throughout that chain, led to the conclusion that there must at least have been a great common influence at work throughout this area, though possibly not an absolute community of race. Judging from the probable social condition of the builders of these monuments, the localities in which they are principally found, the remains found with them, and other circumstances, they were probably constructed under Celtic influences, at least in Europe and Africa. The consideration of a number of facts induces the belief that the single upright stones (menhirs) were used as memorial pillars, the circles and alignments primarily as places of sacrifice, and the dolmens, or table stones, of which there are two well-marked varieties, as places of sepulture on the one hand, and places of sacrifice or memorial on the other hand.

Westerly Drifting of the Nomades from the fifth to the nineteenth Century, by Mr. H. H. HOWORTH.—The papers identified the Circassians of modern writers with the White Khazars of the Byzantine and Arabian writers, from the evidence of tradition, language, and historical notices, and also with the White Huns of Priscus. This fills the area north of the Caspian and the Oral, with a race of Agrian affinities, and very highly cultured; remarkable, too, for being the last nation added to the list of Jewish proselytes. The Turks, in the eighth century, contrary to the opinion of Dr. Latham and others, were confined to the countries east of the Altai Mountains; the previous invaders of Europe, Avares, Huns, &c., having all belonged to the great Ugrian family of races.

Origin of the Tasmanians, by Mr. J. BONWICK.—The origin of the Tasmanians has at this moment a painful interest, the last man of the race having departed, the sole survivor of the island being an old woman. Coming himself from the land of the gum tree, the lecturer stated at large the habits of

the aboriginal inhabitants, and exhibited some very interesting sketches and details of this extraordinary race.

A discussion followed, in which the President and others took part.

Dr. MILLIGAN mentioned some very interesting particulars respecting his personal experience among the aborigines.

On August 25th, *Notes on the Woolwa and Mosquito Vocabularies*, by Drs. R. S. CHARNOCK and C. C. BLAKE, were the first papers called on. The Secretary explained that the bulk of the paper consisted of the vocabularies and their explanations; he did not think it need be read. It was accordingly taken as read.

The Natives of Vancouver's Island and British Columbia, by Dr. R. KING, F.A.S.L.—The natives are called Flat Heads, of which there are four varieties:—the elongated head, from before backwards, the conical head, the square head, and the elongated head from side to side. These artificial heads are produced by pressure on the forehead, and bandaging on the sides (the elongated head from side to side excepted), until the child is a year old. It does not affect the intellect. It is mere displacement of brain. He called this the artificial deformity, in which there is conformity of error; but he described a deformity which is going on to a great extent in civilised life, which he called natural deformity, or non-conformity of error, which he attributed to the mode of nursing. For instance, the child is nursed on one side, there being a loss of one breast; or the mother has twins, and nurses one child on side and the other on the other side; or she is a wet nurse, and nurses her own child on the one side and her foster child on the other. This mode of nursing necessarily inclines one side of the head downwards; it may be the right side, or it may be the left. Now, as the brain necessarily forms the brain case, or skull, as the kernel of the nut forms the shell, the brain in its growth, which is very rapid in early life, necessarily carries the bones now incomplete to the depending side; thus the head of the child is larger on the depending side than on the opposite for life; if not corrected before the several bones of the head are consolidated into one form. Thus, the cranial vault is deformed, and in proportion as the cranial vault is deformed so is the face. The cranial vault of the European is well represented in the egg of the turkey. The forehead represents the apex of the egg, the back-head the base of the egg; reverse this, and the base of the egg will represent the forehead of the face, and the apex the chin of the face. Deformity of face is, therefore, necessarily the result of deformity of the cranial vault. A further deformity of face takes place in the child sucking its thumb, the index finger being placed as a rest on the nasal bones, then inclining them to one side, either right or left, as the child takes to its right or left thumb to suck. In order to obviate the deformity natural, Dr. King has taken a hint from the Esquimaux. He found in his visit amongst them that they nursed their children from their back, and by a shrug of the shoulder the child is brought under the right or left arm as the mother desires, thus the right head and left head are depending alternately; thus the civilised mother, having lost one side by alternately nursing from the front and the back, will make up for the loss she has sustained, and produce a symmetrical head and face, and not a deformed head and face, and an intellect of conformity, instead of non-conformity. The native population of Vancouver's Island is estimated at eighteen thousand, but, as in all cases of estimates of the uncivilised races, wandering as they do, this estimate cannot be relied upon. By far the most numerous of powerful tribes live on the west coast or on the outward seaboard of the island, and the white man is respected by them. The natives generally are in a very degraded state; occasionally industrious, trustworthy individuals are to be met with, but, as a body, continuous labour cannot be depended on. They live entirely on fish, and on a small esculent plant called camass, which they collect and store up for winter, as we do potatoes, and they cook them as we do by boiling and baking. The camass digging is a great season of *r  union* for the women of the various tribes, and answers to our haymaking or harvest home.

On the *Esquimaux, considered in their Relationship to Man's Antiquity*, by Captain W. S. HALL.—The Esquimaux, as is well-known, inhabit regions within the Arctic Regions, comprising Greenland and the islands to the west

of that continent. Ethnologically considered, they are of the Mongolian type, and in this respect allied to the Finns and Laplanders, and the races of Central and Eastern Asia. The question arises, where and when did this peculiar people originate? That no originating centre of the human species can have occurred within the Arctic Circle as at present constituted is self-evident. That the progenitors of the present inhabitants migrated within any recognisable period of history, from southern and more genial latitudes, is equally irreconcilable with ordinary reason, even if their peculiar type did not render such hypothesis untenable. Against the possibility of Greenland having been peopled from Lapland or Finland, the evidence is so strong as to amount almost to a certainty. In the first place, the North Cape of Europe is separated from Cape Farewell, in Greenland, by at least sixty-nine and a half degrees of longitude. Again, the prevailing winds in these latitudes are from the west, or from Greenland to Lapland; and lastly, the Gulf Stream in its north-easterly course, between Iceland and the coast of Norway, would naturally carry any fragile craft from the north rather towards Nova Zembla than to Greenland. The lecturer then proceeded to show that a temperate climate prevailed in the Arctic regions during the miocene era, and proved this by giving a list of the fossil plants which had been found in Greenland, and submitted to Professor Heer. These showed that, at the time they lived within the Arctic circle, a warmer circle characterised that latitude than that now prevailing in Devonshire. From this Captain Hall deduced the conclusion that the miocene was the epoch when man first made his appearance on the earth.

Sir JOHN LUBBOCK, Bart., said he had no doubt that ultimately man's advent on the globe would be traced to the miocene epoch, but he differed from the author, in holding that man was to be found in his original condition in the Devonshire bone caves, rather than in the temperate fossil forests of the extreme North. The reindeer and the whale had always accompanied prehistoric man, and he did not see why he should be less happy than in more temperate regions. Were it not for such intellectual treats as the British Association meetings, and were he to choose a purely animal life, he should prefer an Arctic condition to that of the dripping forests in Central America.

Sir E. BELCHER next gave a short account of the raised beaches in the Arctic regions, and of the various fossil plants he had himself found.

Mr. VIVIAN thought that the Bovey Tracey lignite beds were of the same age as the Greenland, and if Captain Hall's idea were correct, human remains might be found there.

Notes on an Inscribed Rock, by Mr. R. TATE, was so well illustrated by diagrams that the Chairman said they were sufficient.

An Obstacle to Human Longevity beyond Seventy Years, by Sir DUNCAN GIBB, Bart.—He drew attention to the position of the leaf-shaped cartilage at the back of the tongue, known as the epiglottis, in 5,000 healthy people of all ages, and in eleven per cent. it was found to be drooping or pendant, in place of being vertical. He discovered the important fact that in all persons over seventy, its position was vertical, without a single exception—a circumstance of the highest importance bearing upon the attainment of old age amongst Europeans. In a number of instances, where the age varied from seventy to ninety-five, in all was this cartilage vertical. Many of these he cited as examples, such as the well-known statesmen, Lord Palmerston, Lord Lyndhurst, Lord Campbell, and Lord Brougham. He also gave instances among old ladies still alive, at ages from seventy-six to ninety-two, whose epiglottis was vertical. But the most remarkable was that of a gentleman still alive, 102 years old, in whom it occupied the same position. His facts clearly demonstrated that longevity beyond seventy could not be attained with a pendant epiglottis. He summed up his views in the following conclusions:—1. As a rule persons with a pendant epiglottis do not attain a longevity beyond seventy. Possibly a few may overstep it, but such examples are exceptional. 2. With pendency of the epiglottis, life verges to a close at or about seventy, and the limit of old age is reached. 3. A vertical epiglottis, on the other hand, allows of the attainment of fourscore years and upwards, all other things being equal, and affords the best chance

of reaching the extremest limit of longevity. 4. Lastly, pendency of the epiglottis is an obstacle to longevity, certainly beyond the age of seventy years, and it is a peculiarity that occurs in eleven per cent. of all ages amongst Europeans.—He followed this with a paper on *A Cause of Diminished Longevity beyond Seventy Years*. He said a considerable portion of the Jewish race possess a physiognomy, to which he gave the name of sanguineo-oleaginous expression, characterised by varying degrees of flushed face, sleepy aspect, greasy look, guttural or husky voice, and fulness of body. The best examples of the class are to be seen in the furniture auction rooms of the metropolis. With this expression is usually associated pendency of the epiglottis. As a rule, longevity is rare among such persons, for they are liable to those diseases of a congestive character, which influence the heart, brain, and liver. The main cause of all this is eating food, especially fish, cooked in oil, which tends to the destructive formative processes in the system, and induces old age before the prime of life is reached, although the individual may appear to be the personification of comparatively good health, from his weight and size. The extensive use of oil in the South of Europe has the same effect in giving rise to congestive diseases and diminished longevity. Pendency of the epiglottis associated with the sanguineo-oleaginous expression is of serious import. The persistent use of oil, therefore, as an article of diet, is pernicious, unless in persons of a spare habit of body, delicate constitution, and liability to disease wherein its employment would prove useful.

Mr. DENDY quoted some cases corroborative and confirmative of the facts mentioned by Sir Duncan.

Mr. A. P. PROWSE said that the epiglottis, as people advanced in years, would naturally fall.

Dr. STEWART thought the subject of both papers was of the greatest interest and importance. Speaking of health and longevity, he thought that if digestion was particularly looked after it would be conducive in a great measure to long life; most of the diseases of the throat were due, in addition, to bad digestion.

Human Remains in the Gravels of Leicestershire, by Mr. F. DRAKE, F.G.S.—In 1866, a tusk belonging to the elephant species was found directly on the Keuper sandstone, at twelve feet from the surface among gravel, near the banks of the river Soar, in Leicestershire. This he regarded as very significant, and plainly indicated that before the deposit of the great drifts of gravel, and when the river here was at least a mile in width, those animals roamed about on the neighbouring hills, and if we co-relate man as contemporary with these animals, we shall probably reach Pliocene times as the date of his appearance. Near Stoney Stanton last year, in a bed of gravel, fifteen feet from the surface, a portion of a human skull was found. It was very low in type, and the brain cavity was small. There was every indication of its having belonged to such a race as the flint weapon makers. There was no remark or discussion on this paper.

Method of Forming the Flint Flakes used by the Early Inhabitants of Devon, by Mr. T. M. HALL, F.G.S.—The flint flakes and chippings found distributed throughout the soil in several parts of North Devon, and those associated with the submerged forests at Northam, occur so abundantly that the question has sometimes been raised whether or not they may have been naturally formed, or whether they may be the result of some unknown kind of accidental fracture. In about ten different localities flint cores have been found buried with the flakes, and, from a careful observation of them, it appears that they are of great importance in deciding this point; for, whilst a flake may possibly, in some cases, be caused by an accidental blow, the cores show unmistakable evidence of design. They show also that, owing to the extreme scarcity of flint all through the northern parts of northern Devon and Cornwall, the early inhabitants appear to have adopted in these districts a somewhat peculiar method of forming the flint flakes, which were probably used by them as knives and scrapers for domestic purposes, or as darts and arrow-heads for war and the chase. This method, as far as I know, differed considerably from that which prevailed in flint-producing countries; and it

seems as if the value of material was such as to induce the makers of these flakes to adopt a plan by which the maximum number was obtained with a minimum amount of waste. All the flint flakes and cores from the ten different stations along the coast, from Croyde to Bude, show a singular uniformity in their design; and the method by which they were formed appears to have been as follows: A model having been selected, a flat surface or base was then formed by striking off the flattest end as near the point as possible. If the flint was cherty, or showed an uneven and hackey fracture, it seems to have been rejected in this first stage of its manufacture; but if, on the other hand, it split with a smooth conchoidal fracture, a series of blows was administered from the flat surface at intervals round the margin, so as to peel off the rough coating of the nodule on three sides. The second series of blows produced the largest flakes; and a third, or even a fourth, set of flakes would successively be obtained in this manner before the core was used up. This peculiarity was incidentally noticed by me about two years ago, in the course of a communication to the Society of Antiquaries; and a subsequent examination of many hundred flakes and cores has served to prove that the same process was in use throughout the whole of this district. The largest flakes hitherto found in North Devon are about three inches in length, but between these and the smallest, which measure not more than three parts of an inch, there are innumerable gradations in size. The result of the principal excavations which had been made at Croyde and Northam shows that the average proportion of cores to flakes is about fourteen per cent.

SIR JOHN LUBBOCK did not see that there was any difference in the formation of the flakes found in North Devon and those found in other parts of the country. He had noticed in the Exeter Museum one or two labels which he would like to see removed; he referred to some natural flakes which were labelled as cores, but there was not the slightest evidence that they had been subjected to human operation.

THE PRESIDENT observed that if private remark were made to the curator of the museum, he had no doubt that the labels would be corrected. When there was any doubt or uncertainty about objects, they should be kept separate.

MR. R. GARNIER read a brief paper *On the Head of a Negro*, which he compared with the European skull.

This was followed by a lengthy paper *On the Frontier Line of Ethnology and Geology*, by H. H. HOWORTH, Esq.

MR. J. H. KINAHAN, in his paper, *On the Race Elements of the Irish People*, remarked that they seemed to be of a very mixed origin.

Race Affinities of the Madecasses, by Mr. C. S. WAKE, was too voluminous to be read at the present point of the proceedings.

A short extract was read of Mr. J. STIRLING's paper, *On the Races of Morocco*; after which the Chairman declared the work of the section at an end.

The following papers, which were taken to Exeter, were withdrawn by the authors, in consequence of no Anthropological Department having been appointed:—

DR. BEDDOE—"Anthropology of Devon and Cornwall."

L. O. PIKE—"Method of Anthropological Research."

L. O. PIKE—"Psychical Elements of Religion."

DR. HUNT—"On the Question of the Acclimatisation of Man considered with reference to Europeans in the United States."

DR. HUNT—"On the Negro in the New World."

E. PEACOCK—"On the Anthropology of the Isle of Axholme."

DRS. CHARNOCK and CARTER BLAKE—"On the Mosquito and Wulwa Dialects."

J. P. HEPWORTH—"The Races of Jamaica."

And others the names of which have not reached us. The following papers were read in other departments of the Association:—

The Occasional Definition of the Convulsions of the Brain on the Exterior of the Head.—This paper, which was read by Mr. T. S. PRIDEAUX, was illustrated by a cast, and the leading conclusions were thus stated:—The general outline of the skull—with the exception of its base and certain

limited portions covered with muscle, more especially beneath the arch of the zygoma and behind the external angle of the orbit—is convex, presenting a flowing curve. Occasionally, however, and perhaps more frequently in the forehead than elsewhere, the outline of a cerebral convolution is so prominently defined in the skull as to be very apparent in the exterior of the head through all the integuments. Sometimes it happens that, after wasting from sickness, the outline of convolutions masked before through the thickness of the integuments, becomes so conspicuous that relatives call the attention of the medical attendant to these prominences, and declare them to have grown out since the illness. Now, could we discover the cause which underlies this exceptional configuration of the brain, we could scarcely fail of being much enlightened as to the laws which generally preside over the development of this organ. Are we to regard this peculiarity as an indication of progress towards perfection, or the reverse. The result of my own observations leads me to think there can be little doubt of the greater frequency of this occurrence in civilised than in savage races. Minute examination reveals great differences in the proportion the size of the convolutions bear to each other in brains of the same general size. In two foreheads of the same breadth, for example, in A the convolutions seated in the mesial line shall be much wider than in B, whilst in B the lateral convolutions shall be much wider than in A. As in different families or races, the features of the face bear very different proportions in size to each other, a certain average proportion being characteristic of each, so with the convolutions and groups of convolutions of the brain. Now, the theory I have to propose as an explanation of the protuberance of isolated cerebral convolutions is that either exercise or the crossing of races by marriage has caused offspring to be born with a predisposition towards the more energetic manifestation of a function than the extent of surface allotted to it by the brain type of its race will furnish; that this extent of surface not being susceptible of being widened without subverting the general packing arrangement and proportionate surfaces of organs and figure of the brain as a whole belonging to the type, Nature effects her purpose by thrusting the skull outwards. This theory requires that the cerebral convolutions most frequently protuberant shall be those appropriated to functions which the progress of civilisation has a tendency to cultivate, and render men more active than they are found in a ruder state of society; and, if I am right in believing that the convolutions which in the frequency with which they occur, defined on the exterior of the head, surpass all others, are those of the organs of music and causality, I think it must be admitted that so far the test does not fail. Gall especially described two different forms or modes of development assumed by the organ of music. In some of the most eminent composers, the external corners of the forehead are enlarged and rounded towards the temples, giving extent of superficies to the organ without clearly defining its outline. In others, equally celebrated, the organ presents a well defined prominence in the form of a pyramid, the base of which rests above the eye, whilst the apex reaches half way up the forehead, and terminates at its external edge. Gall gives the Mozarts, father and son, Michael Haydn, Paer, Dussek, Crescentini, and several others, as examples of the first conformation; Beethoven, Joseph Haydn, J. J. Rousseau, Gluck, etc., as examples of the second; and I may add to the list of great musicians presenting the outline of the organ in a well defined pyramidal form the names of Mendelssohn and Weber. I am acquainted with a lady, who possessed from childhood an extraordinary genius for music, in whom the organ presents the first form. The configuration of the external corners of the forehead is such as to provide a wide extent of surface for the organ of music, but no defined outline is perceptible. This lady married into a family singularly wanting in musical capacity. She has two daughters who, without equalling their mother in genius, inherit from her a capacity for music much above the average. Their heads, however, follow in general outline the type of their father's family; they lack the spacious temporal region of their mother, and present the organ of music in the pyramidal form, and this form is, beyond doubt, that which is most commonly met with in England. On an average, I have

my attention arrested at least once in six months, by seeing a very conspicuous development of the organ of music in the pyramidal form in a complete stranger. When circumstances permit, I always endeavour to ascertain whether the endowment with the faculty is commensurate with the development of the organ, and I can say with truth, that I never yet received a negative answer. This mask which I hold in my hand, I took from the head of a gentleman a few days since, as a good example of the development of the organ of music in the pyramidal form. Calling recently at an office in the city, a perfect stranger came forward to address me. As he approached, the cross-light from a window brought his organ of music into such prominent relief, that I half-involuntarily exclaimed, "Why, you ought to be a musician." "What makes you say so?" said he. "Because you have it written in your forehead," I replied. "Ah! I suppose you are a phrenologist," he rejoined; "but it is strange you should have discovered it, for I have had my head twice examined, especially for the organ of music, by lecturers on phrenology, who visited the town where I then resided, and they both told me I had very little of it. You, however, are right; by an accident you found me in this office, but I am the organist of —, and well known in the musical world."

In the course of the discussion, which was more irregular and conversational than usual, various objections were started by the Chairman, Professor McClelland, Mr. Wallace, and others, to the theory of Mr. Prideaux, as to how it was that Mr. Prideaux could distinguish between the human voice in conversation and in music, as he (Mr. Prideaux) had stated he could.

The CHAIRMAN (Professor Busk) said he should be glad to hear remarks upon the subject. He was not satisfied himself that the prominence pointed out by Mr. Prideaux was caused by the development of the brain at the particular point, or whether it might not be the temporal muscle, or whether it might not be fat.

Mr. PRIDEAUX denied that it could be a development of the temporal muscle which produced such a protuberance, as that did not extend so far.

The CHAIRMAN said he doubted whether the convolutions of the brain could produce a change of appearance on the exterior of the skull. They were often made on the interior of the skull.

Mr. PRIDEAUX said they would always find the prominences, as he showed them to exist in this case, in all great musicians.

The CHAIRMAN said it remained to be seen whether there were not brains of people of equal musical power which did not show any such external mark.

Mr. PRIDEAUX said that was just what the phrenologists had been asking the anti-phrenologists to show them for years. It was for the anti-phrenologists to produce those proofs. He would take upon himself to say that it was an invariable fact that a great power for music would be accompanied by the conformation of skull which he now pointed out.

The CHAIRMAN said in this particular instance the man Mr. Prideaux spoke of seemed to have been amongst phrenologists, and they had not discovered his musical powers.

Mr. PRIDEAUX said that was because the people who pretended to a knowledge of phrenology were often not capable of distinguishing such cases.

Mr. WALLACE complained that only one instance had been brought before them. They ought not to be asked to accept such a theory except on the production of an overwhelming mass of facts. If the crania of two hundred or three hundred musicians could be brought before them, all showing the development of that one part of the skull, then there would be some force in the argument; but to bring a solitary case, and say there were others, was merely a waste of time.

Mr. PRIDEAUX, in reply to various other questions, said that he could not tell how the brain performed its functions with regard to musical pitch. It could only, of course, be a matter of analysis, and in every great musician ever known, that part of the forehead had been very large. The theory of music was founded on the musical pitch, or the number of vibrations in a second, and in some way the organ of music, or that part of the brain, took cognisance of the number of those vibrations, just as the organ of colour

would take cognisance of the number of vibrations in the rays of light. He would venture to say that he could at once detect, in a number of strangers, those who would be likely to sing in tune. He was himself deficient in that faculty, but had an extraordinary memory for voices, and could recognise any one he knew by hearing him utter two syllables.

Mr. WALLACE: How do you distinguish between that faculty and that which gives the power of a musician?

Mr. PRIDEAUX said by the peculiar intonation of the voice. He did not know whether physicists had as yet defined mathematically what produced an agreeable voice or otherwise, but phrenologists could, by the shape of the head, tell what sort of a voice a man had. A man with a low head never had a rich voice. There was, too, a deep ringing voice given by the presence of what the phrenologists called destructiveness, which in some actors lent great force to their outbursts of rage. As to bringing a great number of examples, that had been done by Gall years ago. Phrenologists had filled the museums with casts and examples, and he only wanted men of science to turn their attention to the subject, and to bring facts in opposition. The onus rested with their opponents to disprove the position taken by phrenologists.

The CHAIRMAN suggested to Mr. Prideaux that he should experiment upon the audience in picking out the musicians, but Mr. Prideaux demurred to that course as not being scientific in method; and the discussion shortly ended, as did also the business of the section, with a vote of thanks to the chairman.

Mr. PENGELLY, F.R.S., was called on by the President to read the *Fifth Report of the Committee on the Exploration of Kent's Cavern*. He said that beneath the floor of the "vestibule" was a layer of black soil, six to nine inches deep, which had yielded 366 flint implements, bones and teeth of recent and extinct animals, charcoal, flint cores, &c. It had been objected that people could never have lived in the caverns, because smoke would have suffocated them. An experiment which had been tried, in burning six faggots of wood, showed the fallacy of the objection. In the exploration of the cavern, a daily journal had been kept, and every circumstance was noted down. 3,948 boxes of fossil bones had been found, and these Mr. Boyd Dawkins undertook to examine for the purpose of determining the species to which they belonged. Among other objects, a bone needle had been found in the black band beneath the stalagmitic floor. The eye was capable of carrying a thread the thickness of thin twine. A bone harpoon or fish-spear, forked on one side only, had been met with. Other undoubted evidences of early human art had been found. During the years 1868-9, Mr. Everitt, who is engaged by the Rajah of Sarawak to explore the caves of Borneo, visited Kent's Hole for the purpose of familiarising himself with the mode of operation. Mr. Pengelly then detailed the various layers underlying the stalagmitic floor, in which he was aided by a series of large diagrams. The cave earth, or floor underneath the stalagmite, was full of flint implements, teeth of the mammoth, bear, hyæna, &c., and gnawed and split bones. Inscriptions dated 1688 had been found on the stalagmitic walls of that part of the cavern known as the "crypt." The deduction drawn by Mr. Pengelly was that this period of time, although the dripping of water was very copious, had been insufficient to coat over and obliterate the writing. This gives some idea of the immense age of the stalagmite floor, and of the time occupied in its formation. Beneath the earth was a breccia, and up to last year not the slightest traces of man had been found. This year, however, a flint flake was met with, thus carrying the antiquity of man further back. A monthly report had been sent up to Sir Charles Lyell. In some places the stalagmitic floor was as much as twelve feet thick. Associated with the flake were the remains of the cave-lion, the cave-bear, mammoth, &c. In fact, this was the most important anthropological relic which the cavern had yielded. Mr. John Evans, F.R.S., had seen the flint flake, and had declared it to be of undoubtedly human workmanship.

Mr. BOYD DAWKINS read a few notes on the mammalian remains men-

tioned by Mr. Pengelly. He showed that the various strata of the floor of the cavern contained remains of animals of different epochs, from the post-glacial upwards. During the time the black or upper band was being formed, a race of cannibals inhabited the cavern. The older deposits contained remains of the glutton, a species of hare larger than the existing type, the beaver, &c. Mr. Dawkins concluded by remarking on the vast antiquity of the human race as indicated by the facts mentioned in the report.

The Extinction of the Mammoth.—A paper on this subject was next read by Mr. H. H. HOWORTH. The various historical notices in old authors of the mammoth remains in Siberia and elsewhere, were condensed. The usual idea was that the mammoth was a sort of huge mole, which rarely came to the surface. This was the way their vast remains were accounted for. Mr. Howorth did not think the extinction of the mammoth ought to be ascribed to the men of the early stone age.

Professor PHILLIPS and Mr. BOYD DAWKINS made some remarks on the above paper, the former dwelling at some length upon the more popular geological notions of the former conditions of northern geography, and the latter observing that Mr. Howorth had misunderstood him. He had never said that the extinction of the mammoth in Siberia was owing to his being hunted down; but he had stated that in England and Western Europe generally, there was no doubt that the mammoth had become extinct by the hand of man.

Mr. HOWORTH briefly replied, stating that he still differed from Mr. Dawkins as to the extinction of the animals mentioned. He thought that different races of man had become extinct along with the animals.

Mr. PENGELLY next read a paper *On the Alleged Occurrence of Hippopotamus major and Machairodus latidens in Kent's Cavern*. Mr. Pengelly thought there was no reliable evidence as to the occurrence of the *Hippopotamus*, but the *Machairodus* was undoubtedly associated with the other remains.

In Memory of
JAMES HUNT, PH.D., F.S.A.,
 FOUNDER AND FIRST PRESIDENT
 OF THE
ANTHROPOLOGICAL SOCIETY OF LONDON,
 AND
 SOLE EDITOR AND PROPRIETOR OF THIS REVIEW,
 WHO
 DIED AUGUST 29, 1869,
 AGED 36 YEARS.